

INTERNATIONAL CONFERENCE



Rethinking the Role of the State in Research Platforms (Knowledge Networks and Markets – KNM): the INCTs (National Institutes of Science and Technology) in Rio de Janeiro. (RJ INCTs)

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Bringing Antonio Barros de Castro back in - 1610, the introduction of an important innovation in the production of colonial sugar cane.

The moenda com entrosas – the vertical axes to crush the sugar cane instead of the horizontal axes.

The current wisdom was the incompatibility of slavery with technical progress.

The innovation had very important social consequences: the reduction of the initial capital to establish a sugar mill. Now the “fornecedores” (sugar planters) could have their own “engenhos” and are not obliged to sell the sugar cane to the “senhores de engenho”

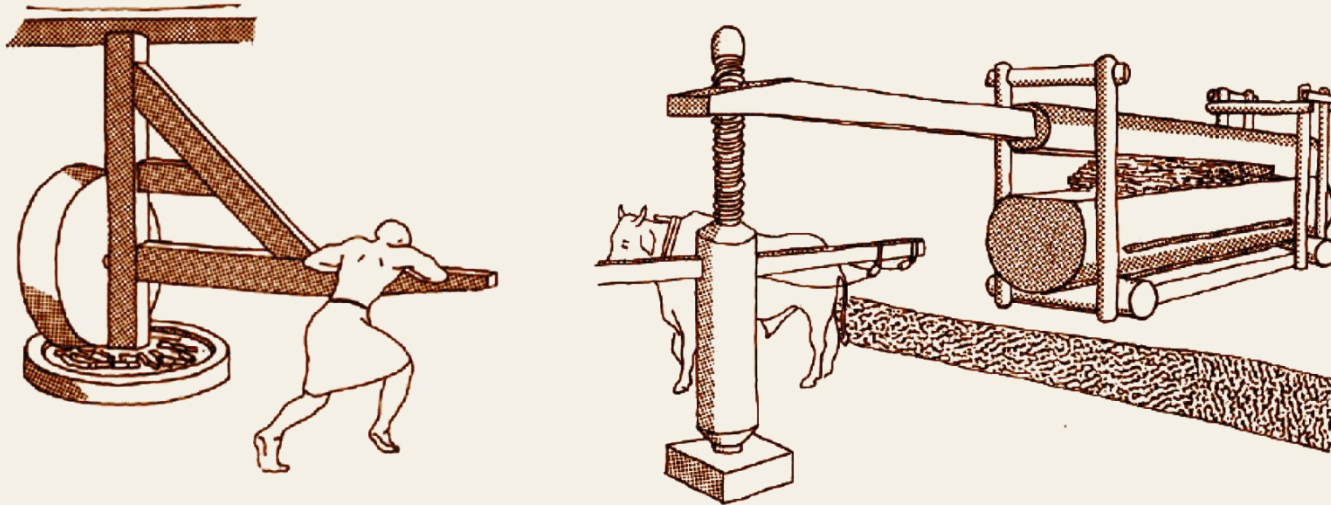
The possibility of being at the forefront of innovation landscape in a certain sector in a certain period of time represents a counterintuitive premise against the perception that Brazil (in Colonial times or even today) had (has) a curse: the extraction of natural resources with poor value added - Brazil wood, gold and silver, soybeans and meat.



- “Dormia, a pátria assim tão distraída, sem perceber que era subtraída, em tenebrosas transações”. (Slept the motherland so distracted, without realizing that she was subtracted in sinister transactions), says Chico Buarque de Holanda’s lyrics of Vai passar.
- This is my motivation – INCTs are at the forefront of their fields of knowledge

Brazilian identity embedded in the past, and in the future must be reconstructed.

4th National Conference in Science, Technology and Innovation in 2010 organized by Luiz Davidovich



Figures 1 and 2. Source: Fernandes, 1971

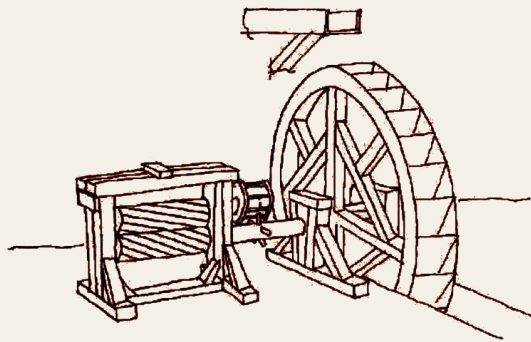


Figure 3 – Moenda de dois eixos com roda d'água. Source: segundo maquete do Museu do Açúcar, Recife-PE

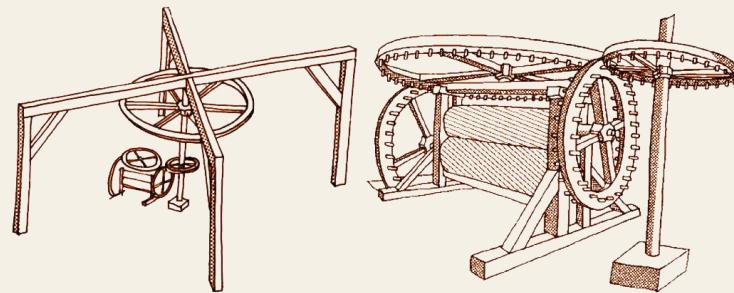


Figure 4 – Moenda de dois eixos – tração animal.

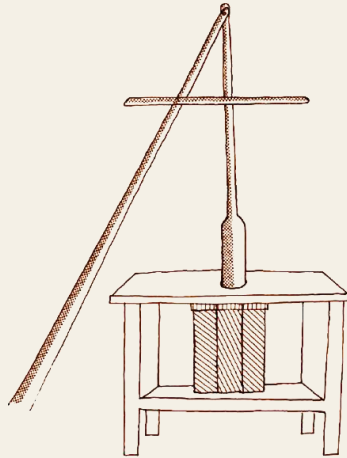


Figure 5 – Moenda de entrosas , 1613.

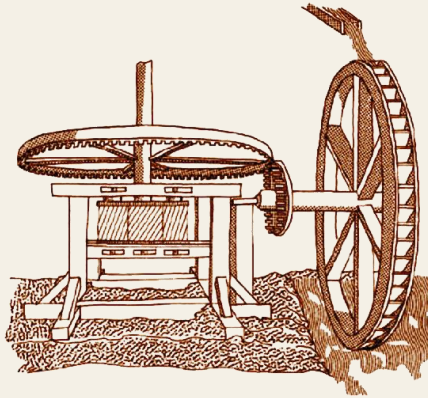


Figure 4 – Moenda de entrosas, com roda d'água.

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Medicamentos**

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Direitos de acesso**





INCTs (National Institutes for Science and Technology) are formal (and informal) collaborative research platforms, generally producing knowledge at the forefront of their fields. INCTs are national and international networks.

The project research questions are the following:

- First research question. What are the most relevant knowledge governance devices in the case of RJ INCTs? Knowledge governance "encompasses industrial and competition policies as well as intellectual property rules and regulations, but supersedes them by trying to investigate how those policies provide a public repertoire and an institutional framework within which those linkages build up coherently and their inherent conflicts are properly managed" (Burlamaqui, Castro and Kattel, 2012).

In the case of INCTs the main governance structure is the "Comitê Gestor" (Management Committee). CGs can be very effective. They are responsible for the decision making processes and they represent all the institutional members of the INCTs. INCTs are interdisciplinary and interinstitutional. But knowledge governance is much more than their governance structure.

The first challenge is to reveal the institutional architecture and the institutional arrangements of the knowledge governance structure.



Knowledge Governance encompasses industrial and competition policies as well as intellectual property rules and regulations, industrial and innovation policies, that provide a public repertoire and an institutional framework within which those linkages build up coherently and their inherent conflicts are properly managed. (Burlamaqui, Castro and Kattel, 2012).

Analytical framework which embraces different forms of public governance mechanisms:

- A. supervision,**
- B. rule making,**
- C. regulation,**
- D. policy prescriptions,**
- E. institutional coordination and**
- F. applies them to the realms of knowledge production, diffusion and appropriation.**

Knowledge governance is taken up with how the deployment of governance mechanisms



- Second research question. How the RJ INCTs acquire dynamic capabilities (DM)? The concept of DM (Teece, 2009) can be understood as a meta competence of sensing, seizing and reconfiguring not only new opportunities prospected by firms and organizations under the lens of its own core competences, but its ability to introduce innovations and new business models.

The research project is introducing the concept of “reshaped dynamic capabilities”, aiming to take into consideration values and shared believes, such as: sustainability, fair commerce, reciprocity, crow funding, solidarity, social movements, social implications (distribution of income), digital transformation, gender issues, ethnicities, cosmologies and religious convictions.

In the case of INCTs, DC should also consider a new dimension: the “demonstration effect”, the building up and the spread of a new field of knowledge. DC spillovers should also be considered, we could say that it is an induced dynamic innovation.



- Third research question:

What are the roles of the state and the market and how to evaluate them. The “usual suspects” references would be:

- mission oriented;
- pick-up winners;
- active industrial and innovation policies;
- state capacities;
- coalition of interests;
- structuring consensus on research priorities.



The main challenge is exactly this: INCTs seem to be out of these conceptual frames, they simply “do not fit in any shirt”.

The financial dimension of INCTs should also, and mainly, be reconsidered under the financial crisis of the State.

Governmental funding is still central, but the dependence is strangling these very successful research platforms. New public – private configuration should be reconsidered.

Funding is under stress.



- I will finish with the results of a post-doc researcher Denise Golgher under my supervision:

- **About human health innovation in Brazil**

“Genomics and digital health fueled an engine that was inexistent 5-7 years ago. Most of the commercial and financial interest raised by genomics relied on the potential of selling high-value molecular diagnostic tests to hospitals and patients. Diagnostic tests (based on next generation sequencing) applied to oncology are a major drive, but not the only one. These tests are performed by small specialized laboratories, medium-sized and the big laboratories such as DASA, Hermes Pardini and Fleury”.

“The progress in immuno-oncology has been particularly impressive in Latin America and Brazil leads the business in the region”.



Brazil will not be in the forefront of cancer pharmaceuticals, she concludes, but can be at the forefront of cancer prevention, specially in the case of “liquid biopsies” (blood exams).

- “Although the article emphasized the private sector initiatives in biomedical innovation, it cannot be concluded without an acknowledgement to the fundamental role of the State. BNDES and FINEP are major players in venture capital funds dedicated to technology-based businesses, among other initiatives. The State-sponsored SUS, with its more than 100 million patients, could be a great source of data that could help to advance better health solutions. We must look at it under this perspective”.